

Work Order ID 77332

\*77332\*

Page 1

December 5, 2011 12:43:40 PM

Item ID: D6014-090

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Item Name: ALUMINUM EXTRUSION

39 c 11/12/05

Stop \*NS2\*

Start Date: 12/05/11 Start Qty: 30.00

\*30\*

Cust Item ID:

Required Date: 4/20/12 Req'd Qty: 30.00

\*30\*

Customer:

Reference:

Approvals: Process Plan: CX

Date: 11/12/05

Tooling:

Date:

Run Start \*NR1\*

QC:

Date:

SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw/Nbr	Revision Nbr
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D6014	Rev-A
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100	PURCHASING	0.00
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\*100\*

Purchasing

Memo

0.00

Purchasing

Issue P/O: 15610

a) Extrude as per Dwg D6014

b) Material: 7075-T73/T73510/T73511 (QQ-A-200/11) Seamless Aluminum Tube

c) Minimum ultimate tensile strength = 68 ksi

d) Minimum tensile yield strength = 57 ksi

Possible Supplier: Aluminum Works

Mater

CX 11/12/05 (30)

110	Receive & Inspect for Damage & Mat'l Certs	0.00
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\*110\*

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

12/2/10 (52)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 77332

**\*77332\***

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December 5, 2011 12:43:40 PM

Item ID: D6014-090 Accept **\*N9000040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: ALUMINUM EXTRUSION  
 Start Date: 12/05/11 Start Qty: 30.00 **\*30\*** Cust Item ID:  
 Required Date: 4/20/12 Req'd Qty: 30.00 **\*30\*** Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC6- Inspect dimensions to drawing	0.00							
<b>*120*</b>									
QC	Memo	0.00							
Quality Control	Ensure Material certification comply to Dwg D6006								
150	Identify as per dwg & Stock Location: <del>4/6</del>	0.00							
<b>*150*</b>									
Packaging	Memo	0.00							
Packaging									
160	QC21- Final Inspection - Work Order Release	0.00							
<b>*160*</b>									
QC	Memo	0.00							
Quality Control									

12/02/16 ~~56~~ 56  
 12/2/21  
 12/2/21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

December 5, 2011 12:43:40 PM

Page 1

Work Order ID: 77332

Parent Item: D6014-090

Parent Item Name: ALUMINUM EXTRUSION

Start Date: 12/05/11

Required Date: 4/20/12

Start Qty: 30.00

Required Qty: 30.00

Comments: IPP A05.08.31 New issue KJ/JLM  
and qc3

IPP Rev:B 10.06.07 remove handfinishing

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6014-090P ALUMINUM EXTRUSION		Purchased	No			110	Each	0.0000	1	30		12/2/11 5/56	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

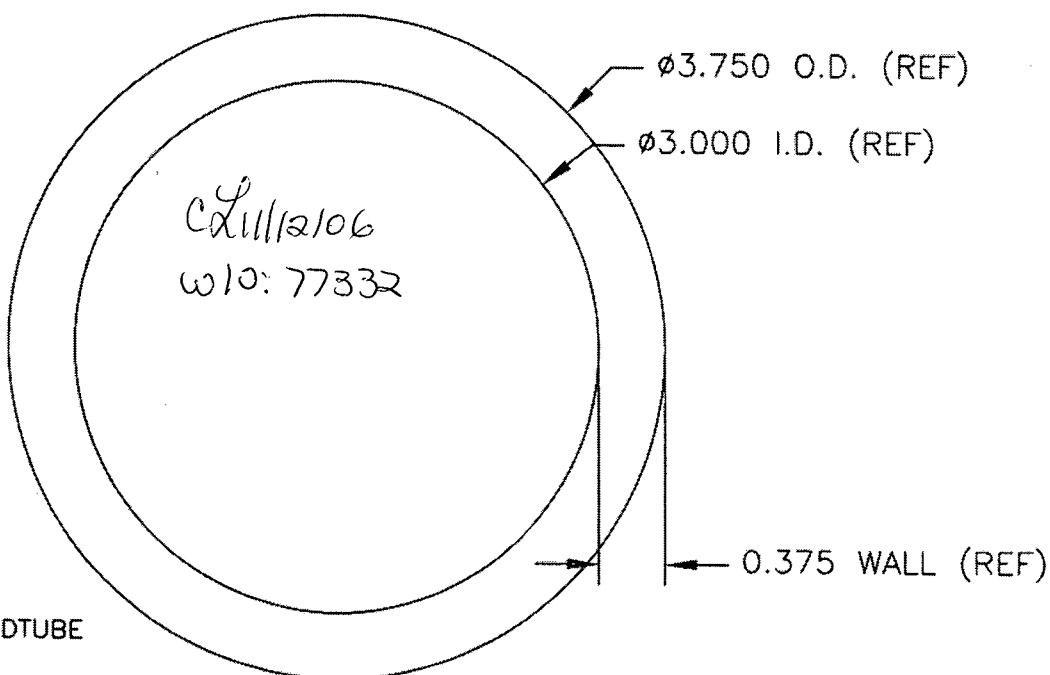
**NOTE:** Date & initial all entries



DESIGN PH	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D6014	REV. A SHEET 1 OF 1
DATE 05.03.18		TITLE SKIDTUBE MATERIAL	SCALE 1:1
A	05.03.18	NEW ISSUE	

RELEASED  
05-08-09 *[Signature]*

## SPECIFICATION CONTROL DRAWING



### NOTES

- 1) D6014-XXX SKIDTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 64" LONG TUBE: D6014-064

- 2) MATERIAL: 3.750 OD x 0.375 WALL 7075-T73/T73510/T73511 PER QQ-A-200/11  
SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 68 ksi  
MINIMUM YIELD TENSILE STRENGTH = 57 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.008$  MEAN ( $\pm 0.016$  INCLUDING OVALITY)  
WALL:  $\pm 0.015$  MEAN ( $\pm 0.038$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.188/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID PO15610

Purchase Order Date 12/05/11

PO Print Date 12/07/11

Page Number 1 of 1

Order From :

VU-ALU001

ALUMINIUMWERK UNNA AG  
630 3033 SOUTH PARKER RD  
AURORA, CO 80014  
USA

Contact Name

Vendor Phone

303 755 5672

Vendor Fax

303 755 5936

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

USD

FOB

Destination-Collect

REVISED \$

Ship To :

DART AEROSPACE LTD

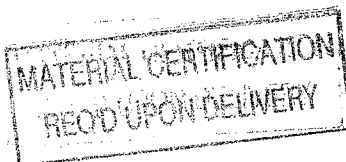
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6014-090P	ALUMINUM EXTRUSION	5/04/12 Yes	25.00 Each		\$578.0000	\$22,542.00

Special Inst: AS PER DWG D6014 REV. A  
B77332  
MATERIAL: 7075-T73/T73510/T73511 AS  
PER QQ-A-200/11  
MINIMUM ULTIMATE TENSILE  
STRENGTH = 68 KSI  
MINIMUM TENSILE YIELD STRENGTH  
= 57 KSI  
SIZE: 3.750" OD X 0.375" WALL

PO Total:

\$22,542.00



Change Nbr: 3

Change Date: 12/07/11

No substitution or deviation without  
consent.  
Certificate of Conformity or Material  
Certification required when applicable



Aluminiumwerk Unna AG · Uelzener Weg 36 · D-59425 Unna

DART AEROSPACE LTD.  
1270 Aberdeen Street  
HAWKESBURY ON K6A 1K7

Kanada

Aluminiumwerk Unna AG

Uelzener Weg 36 · D-59425 Unna

Postfach 11 46 · D-59401

fon +49 (0) 23 03-206 - 0

fax +49 (0) 23 03-206- 116

petra.eisenblaetter@alunnatubes.com

www.alunnatubes.com

page: 1  
date: 12.27.2011  
customer: 40980

## order confirmation

## 45347

your PO dated: 12.05.2011  
your PO No.: PO 15610  
your ref.: Linda Lacelle

contact: Petra Eisenblätter  
Tel.: + (303) 755 5672  
Fax: + (303) 755 5936

representative: CLAUS J. BETTER

We supply acc. to our delivery terms and conditions:

item	quantity	unit	price USD	unit value USD	delivery
100	60,000	PC	578,00	PC 34.680,00	March 23, 2012

AWU article: 20782 / Tariff no. 76082081

Customer article: D6014-090 3.750 X 0.375 X 90

product: Tubes / seamless extruded / EN AW-7075 / round

condition: T 73511 / AMS-QQ-A-200/11

outer diameter:	3,750 INCH Tol.	+0,016	-0,016
tol. for mean OD		+0,008	-0,008
inner diameter:	3,000 INCH		
wall thickness:	0,375 INCH Tol.	+0,037	-0,037
fixed length	90,000 INCH Tol.	+0,188	

inspection: cert. acc. to EN10204/3.1 / RM 469 / Rp0,2: 393

straightness 0,01 INCH / 1 FEET / RMS outer 25

tol. on quantity +10 % -10 %

3.750" OD 0.375" Wall, 90" lengths

Part Number D6014-090 skid tube

Tolerances per ASTM B210

Outside surface: max. defects up to 0.005" (longitudinally)

Commerzbank AG, Unna  
Konto-Nr. 102 56 00 BLZ 443 400 37  
S.W.I.F.T. - Code: COBADE FF 443  
IBAN: DE 90 4434 0037 01025600 00

Sitz der Gesellschaft: Unna  
Amtsgericht Hamm. HRB 3045

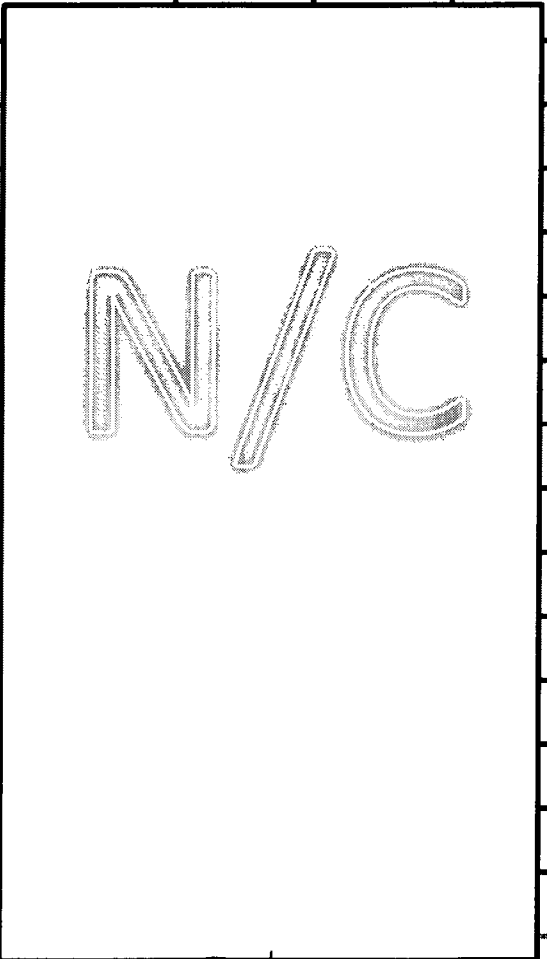
Vorstand: Volker Findeisen

Vorsitzender des Aufsichtsrats: Thomas Wiese



# EXTRUSION INSPECTION SHEET

## ULTRA SONIC MEASUREMENTS

TUBE #	TOTAL LENGTH	DIA two readings	INSIDE DIA	wall thickness measured w/vern	Strightness at 12"	Rockwell Reading	LOCATION on tube	R1	R2	R3	R4
1	90.0"	3.752"/3.750"	2.999"	0.379"	N/C	N/C					
2	90.0"	3.749"/3.748"	2.995"	0.377"	N/C	N/C					
3	90.0"	3.744"/3.753"	3.001"	0.370"	N/C	N/C					
4	90.0"	3.750"/3.751"	2.996"	0.377"	N/C	N/C					
5	90.0"	3.744"/3.746"	2.998"	0.375"	N/C	N/C					
6	90.0"	3.749"/3.750"	3.000"	0.378"	N/C	N/C					
7	90.0"	3.749"/3.750"	2.991"	0.378"	N/C	N/C					
8	90.0"	3.744"/3.748"	2.990"	0.377"	N/C	N/C					
9	90.0"	3.750"/3.746"	2.994"	0.376"	N/C	N/C					
10	90.0"	3.749"/3.750"	2.999"	0.380"	N/C	N/C					
11	90.0"	3.745"/3.756"	2.998"	0.381"	N/C	N/C					
12	90.0"	3.744"/3.745"	2.996"	0.377"	N/C	N/C					
13	90.0"	3.749"/3.748"	2.993"	0.379"	N/C	N/C					
14	90.0"	3.748"/3.745"	3.005"	0.377"	N/C	N/C					
15	90.0"	3.745"/3.746"	2.995"	0.375"	N/C	N/C					
PART # D6014-090		P/O# 15610		BATCH # 77332		Notes: REFERENCE ONLY 8/10/15					

